

SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore - 641 107



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Interpolation with unequal Intervals
Lagrange's Interpolation formula
         Let yo. y., ... yn be (n+1) points of a
function y = f(x) where f(x) is assumed to
be a polynomial in x, corresponding to arguments co. >c., -xn, not necessarily equally spaced.
   y = f(x) = \frac{(x - x_1)(x - x_2) - (x - x_n)}{(x_0 - x_1)(x_0 - x_2) - (x_0 - x_n)} y_0
                + \frac{(x-x_0)(x-x_2)-\cdots(x-x_n)}{(x_1-x_0)(x_1-x_2)-\cdots(x_1-x_n)}
                 \frac{(x-x_0)(x-x_1)-\cdots(x-x_{n-1})}{(x_n-x_0)(x_n-x_1)-\cdots(x_n-x_{n-1})}y_n
  This is called the Lagrange's formula for
interpolation.
Problems
D Using Lagrange's interpolation formula, find
the value of y corresponding to x = 10 from the
following data
                                            11:
                                            16
                                   14
```

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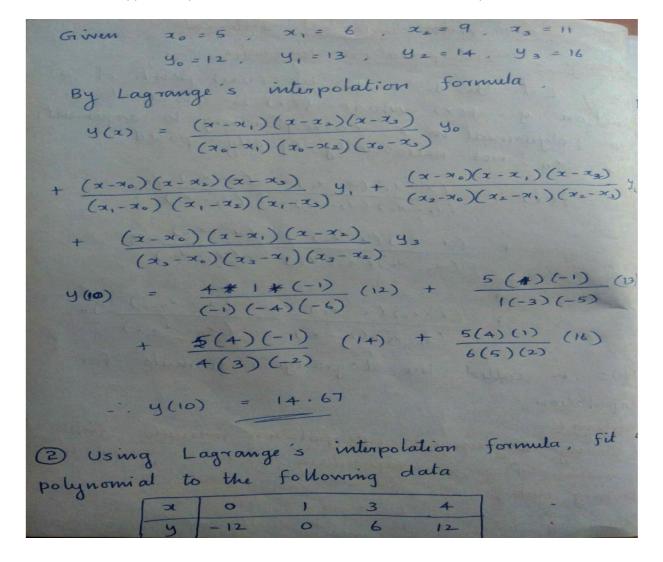
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